Lee County Government
Office of Tax Administration
Dwane Brinson, Tax Administrator

REPORT CONTENTS

Division of Real Property Appraisal

2011 Sales/Assessment Ratio Report

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LEE COUNTY
NORTH CAROLINA
Committed Today for a Better Tomorrow

August 15, 2011

Lee County Board of Commissioners,
County Manager, John Crumpton
106 Hillcrest Drive
Sanford, NC 27330

Dear Board of Commissioners and Mr. Crumpton:

On behalf of the Lee County Tax Office, I am pleased to present the 2011 Sales/Assessment Ratio Report. The Lee County Tax Office Appraisal Division's *Annual Sales/Assessment Ratio Report* was designed in an effort to provide a year in review of real property sales within Lee County. This will allow us to relay to the governing board and county administration a comparison of 2007 tax assessed values to actual market sales. It goes further to show the quality of real property tax assessments within the County.

Being currently scheduled for a 2013 countywide revaluation, the Lee County Tax Office Appraisal Division is monitoring and analyzing market sales almost daily. These current sales will be used to bring tax assessment up or down to current market value as of January 1, 2013, the appraisal date. North Carolina General Statute 105 – 287 prohibits a county tax assessor from changing the assessed value of a property in a non-revaluation year for an economic consideration. This means that once a revaluation is conducted, the effective tax assessments and schedule of values both are more or less frozen until the next revaluation.

Uniformity and accuracy are utmost goals. As a means of quality control, we currently conduct a sales/assessment ratio study each quarter for the North Carolina Department of Revenue (NCDOR). This quarterly study for the NCDOR is based on a random sample of sales in Lee County from the preceding quarter only, not all market transactions. The NCDOR collects this information for all 100 North Carolina counties and provides an annual summary. Data in this report, additionally, could foreshadow what may happen in the 2013 revaluation.

Lee County's *Annual Sales/Assessment Ratio Report* measures annual assessment quality by looking at the most recent calendar year's qualified real estate market transactions and comparing that information to corresponding 2007 tax assessed values at the time of sale. North Carolina law requires that property be assessed at 100% of its market value as of the date of its last revaluation, which is currently January 1, 2007 for Lee County. Market conditions affecting properties can change almost daily, but tax assessments reflect market values as of one point in time: the last countywide revaluation.

The Lee County Tax Office is guided by North Carolina and national standards for measuring property assessment quality, as disseminated by the NCDOR and International Association of Assessing Officers. Such standards, and our compliance therewith, are discussed in this report. The data show that the Lee County Tax Office has acceptable levels of assessment uniformity, but some classes of property are more uniform than others.

This information is for public dissemination and reflects the transparency of operations, assessments and civic engagement by the Lee County Tax Office. Feel free to contact me with suggestions for report improvement or in the assessment process in the Lee County Tax Office.

Sincerely,

T. Dwane Brinson, CAE
Tax Administrator
Lee County Tax Office

INTRODUCTION

North Carolina is a "Dillon's Rule" state meaning that the only power a local government has is that which is given to it by the State. All counties in North Carolina abide by the same State tax laws, and no local government can set its own tax law. The *Machinery Act*, chapter 105 of the North Carolina General Statutes, gives property taxation powers to North Carolina local governments.

While some states value different classes of property at different rates, i.e. 50% of market value for commercial property, 25% of market value for residential property, etc., North Carolina values all property classifications at 100% of market value. That is, 100% of market value as of the date of last revaluation. Similarly, North Carolina law dictates that a jurisdiction's tax rate be set and applied to all property classes uniformly. While some may argue that it be done differently, the positive side of this approach is transparency. Here, in North Carolina, tax assessed value and its methodology are lucid.

The Lee County Tax Office Real Property Appraisal Division (hereinafter "Division") assesses real property for purposes of property taxation. Each year staff appraisers review building permits for new homes, changes/additions to structures and garages. Such property changes are noted on the property record card and their condition as of *January 1st* is assessed. The schedule of values from the most recent revaluation is applied to these properties. For example, if a house were built in March of 2011, then its tax assessment would reflect its market value as of January 1, 2007, not necessarily current market value. While the house technically did not exist in 2007 – because it was built in 2011 – the 2007 schedule of values would be applied to this property.

It sometimes is confusing for one to understand a tax assessment. In November 2010 a taxpayer might have refinanced a home in the Tramway area, for example, and the appraisal provided on behalf of the mortgage company indicates a market value of $260,000. Hypothetically, the current tax assessment on that same property might be $235,000. Why are the values different? A basic answer is that the two value estimates are like comparing apples and oranges. The refinance appraisal of $260,000 in November of 2010 is the property's value as of that date, specifically, while the tax assessment is the property's value as of January 1, 2007. The county tax assessor is prohibited from adjusting a tax assessment in a non-revaluation year due to changes in the economy, positive or negative.

Staff appraisers monitor market conditions on a regular basis in preparation for the next countywide revaluation. The Division subscribes to the Sanford Area Multiple Listing Service, and it evaluates sales through deed transfers and other sources. Sales are qualified or disqualified based on appraisal industry standards. The qualification process may involve visiting abnormal market transactions to determine its qualification status. Only qualified sales are used to determine assessment uniformity and accuracy.

In recent years Lee County, much like the rest of the state, has experienced an upward trend in the number of foreclosure sales occurring in the market. Across the appraisal profession, these are not deemed "arms-length transactions" and are not used in estimating market values. Foreclosure sales typically carry an increased risk for the purchaser. Business and economic principles tell us that when there is an increased risk, there also should be an increased expected return on investment. An atypical amount of equity is needed and such properties usually require more-than-typical repairs – often even unforeseen – and are generally not even transferred via a General Warranty Deed. Due to these reasons, the market for foreclosures is dominated by investors looking to make a return.

Approximately 32,000 parcels are assessed by the Division. While a private fee appraiser is concerned with valuing one property at a time, staff appraisers in the Division value properties within an entire neighborhood or market at once. Performing assessments on such a large number of parcels requires mass appraisal techniques and statistical modeling. During a countywide revaluation, staff appraisers develop market-supported land rates, depreciation tables and other variables that have an effect on value. After completing the analysis, the appraiser applies these factors uniformly throughout the neighborhood to value all properties.

We continually strive for higher quality in assessment uniformity. As a check and balance system, staff appraisers' work is checked for accuracy by data entry, and data entry's work is checked by staff appraisers. This reduces clerical errors and the chance of missing information. After properties are assessed, a staff appraiser signs off on his or her work and the record becomes certified.

A measurement of assessment quality is the quotient of assessed value/sale price (hereinafter "Ratio"). A Ratio is the relationship between two numbers, in this case between assessed value and sale price. It measures how accurately assessments represent current market values. This Ratio indicates the typical level of assessment. Because the marketplace is not perfect, there will always be properties that sell for more or less than what can be anticipated due to factors such as sales between people unfamiliar with the market or buyers willing to pay extra for a unique property, among other reasons.

In mass appraisal and assessment ratio studies, we are not only concerned with the level of assessment, as indicated by the assessment ratio, but also the degree of spread or variation from the typical or median ratio. One such statistical measurement of variation is called the coefficient of dispersion (COD). A lower COD indicates more uniform assessments and less variation.

The remainder of the written aspect of this report provides a more detailed explanation of the statistical terms as applied to assessment administration and quality control, and it explains the International Association of Assessing Officers' (IAAO) Standard on Performance for ratio studies.

RATIO STATISTICS

The purpose of this ratio study is to test the current quality of the assessment product produced in the County's last revaluation, and to illuminate how market changes are influencing the impending countywide revaluation. We use ratio studies as a performance gauge that includes several measures of central tendency. A measure of central tendency indicates the typical level of assessments to actual selling prices of real estate. These may be the mean, weighted average or median assessment ratio. Mean assessment ratio is simply the average of all ratios in the sample, weighted mean is the result of dividing the total of all assessments by the total of all sale prices in the sample and median assessment ratio is the midpoint ratio of a data set once arrayed in either descending or ascending order.

In addition to the general level of assessments, we also are concerned with the relative spread or variation that individual ratios depart from the typical ratio. This is measured by the coefficient of dispersion (COD). Acceptable levels for COD depend upon the type of properties being reviewed. According to the IAAO, a COD should typically be less than 20%.

Another statistical measure used to gauge assessment uniformity is the Price-Related Differential (PRD). The PRD tests vertical equity in assessments of higher valued and lower valued properties and indicates if all properties are assessed at the same level. Said differently, it measures progressivity and regressivity. PRDs should range between 0.98 and 1.03, except for very small samples.   A PRD above 1.03 indicates under valuation of high priced properties, whereas a PRD below 0.98 shows over valuation of high priced properties. Tables 1 and 2 of this report illustrates sample computations of these statistics.

Note: the numbers used in this illustration are for illustration only and are not actual

Table 1: Illustration of Assessment Ratio Study Statistics

(1) Property Number	(2) Sale Price	(3) Assessed Value	(4) Ratio A/S%	(5) Deviation From Average
1	$260,000	$230,000	88%	11%
2	$150,000	$138,000	92%	7%
3	$135,000	$127,000	94%	5%
4	$210,000	$203,000	97%	3%
5	$180,000	$180,000	100%	1%
6	$320,000	$320,000	100%	1%
7	$293,000	$300,000	102%	3%
8	$197,000	$205,000	104%	5%
9	$248,000	$260,000	105%	5%
10	$100,000	$112,000	112%	13%
TOTAL	**$2,093,000**	**$2,075,000**	**994%**	**53%**

Table 2: Statistical Calculations (reference Table 1 above for data)

Mean Ratio	=	Total of Ratios (4) 994%	÷	Number of Sales (1) 10	=	99%
Weighted Ratio	=	Total of Assessed Values (3) $2,075,000	÷	Total of Sale Prices (2) $2,093,000	=	99%
Median Ratio	=	Midpoint of Data Array	=		=	100%
Average Absolute Deviation	=	Total Deviations (5) 53%	÷	Number of Sales (1) 10	=	5%
Coefficient of Dispersion	=	Average Deviation (5) 5%	÷	Median Ratio (4) 100%	=	5%
Price-Related Differential	=	Average Ratio (4) 99%	÷	Weighted Ratio 99%	=	1.00

Other statistics and analyses used to analyze our assessment product include:

- Histograms
- Scatter diagrams
- Coefficients of variation
- Multiple regression analyses

The scope of this report does not consider full examination of these additional descriptive statistics. For further information on statistics relating to assessments, IAAO's publication *Property Assessment Valuation* is recommended.

RATIO STUDY STANDARDS

The IAAO is a professional organization of assessing officials that provides educational programs, assessment administration standards and research on assessment and tax policy issues. It has developed numerous standards and texts on assessment and assessment administration. Additionally, the organization is a founding member of the National Appraisal Foundation that developed the Uniform Standards of Professional Appraisal Practice (USPAP).

Standards established by the IAAO are advisory in nature and provide guidance to those performing ratio studies in the mass appraisal field regarding the design, statistics, performance measures and related issues in conducting ratio studies. The Division uses fundamental ratio statistical measures of the IAAO standards, and it is guided by the criteria of the IAAO's Assessment Ratio Performance Standards to judge the performance of Lee County's assessments. See Table 3 below.

Table 3: IAAO's Ratio Study Performance Standards

Type of Property	Measure of Central Tendency	Coefficient of Dispersion	Price-Related Differential
Single-Family Residential			
Newer, homogeneous areas	.90 - 1.10	5.0 - 10.0	.98 - 1.03
Older, heterogeneous areas	.90 - 1.10	5.0 - 15.0	.98 - 1.03
Rural residential and seasonal	.90 - 1.10	5.0 - 20.0	.98 - 1.03
Income Producing Properties			
Larger, urban jurisdictions	.90 - 1.10	5.0 - 15.0	.98 - 1.03
Smaller, rural jurisdictions	.90 - 1.10	5.0 - 20.0	.98 - 1.03
Vacant Land	.90 - 1.10	5.0 - 25.0	.98 - 1.03
Other Real and Personal Property	.90 - 1.10	Varies with local conditions	.98 - 1.03

A primary use of ratio studies is to monitor appraisal levels. This particular study focuses on unadjusted sales price data during the calendar year 2010. Those sales deemed an "arms-length transaction" are used in the study. Sales between related parties, to or from financial institutions or to government agencies are not considered.

On multiple occasions throughout the year the Division contacts property owners and physically inspects sales to verify accuracy of tax data and property characteristics. Sales Verification Questionnaires are mailed to purchasers of property and may be returned by visiting the office, through telephone, standard mail, fax or our website.

Measures of central tendency include mean, weighted mean, median and mode. However, the most widely used measure in the assessment profession is the median as it is less influenced by outliers or extreme ratios. The IAAO supports using the median as the "preferred measure of central tendency" for monitoring assessment performance. For these reasons, this study uses the median as its preferred measure of central tendency.

PRODUCT QUALITY

Each revaluation produces a product for Lee County Government and the taxpayers of Lee County. This product is an estimate of the fair market value of each parcel in the county at a single point in time, the date of revaluation. We must continually measure the quality of this product to gauge how it is performing against current market conditions. As the years since last revaluation increase, it is likely that quality becomes jeopardized due to drastically different market conditions. Many counties in North

Carolina, for this reason, have opted to adjust the quality of its assessment product more frequently than eight (8) years and conduct a countywide revaluation every four (4) years.

Table 4 shows the overall quality of the 2007 revaluation assessments and how those assessments compare with 2010 qualified market sales. Tables 5 and 6 breakdown the countywide data into two classes, improved and vacant, respectively. Tables 7 and 8 show the real property classes of commercial and residential, respectively.

Table 4: 2010 Qualified Sales Analysis

All Qualified Sales	**2009**	**2010**
Number of Sales	405	420
Median	95.13%	96.60%
Mean	93.19%	96.19%
Weighted Mean	90.33%	94.09%
Mode	90.00%	100.00%
Average Deviation	0.1400	0.1307
Standard Deviation	0.2200	0.1989
COD	14.30	13.53
PRD	1.03	1.03

Table 5: 2010 Qualified Improved Sales Analysis

Qualified Improved Sales	**2009**	**2010**
Number of Sales	342	359
Median	96.24%	97.21%
Mean	96.41%	98.00%
Weighted Mean	94.71%	96.07%
Mode	91.98%	86.81%
Average Deviation	0.1000	0.1096
Standard Deviation	0.1640	0.1605
COD	10.00	11.28
PRD	1.02	1.01

Table 6: 2010 Qualified Vacant Sales Analysis

Qualified Vacant Sales	**2009**	**2010**
Number of Sales	63	61
Median	75.00%	90.38%
Mean	75.71%	85.55%
Weighted Mean	55.37%	63.31%
Mode	90.00%	80.00%
Average Deviation	0.2770	0.2465
Standard Deviation	0.3420	0.3302
COD	37.00	27.27
PRD	1.37	1.43

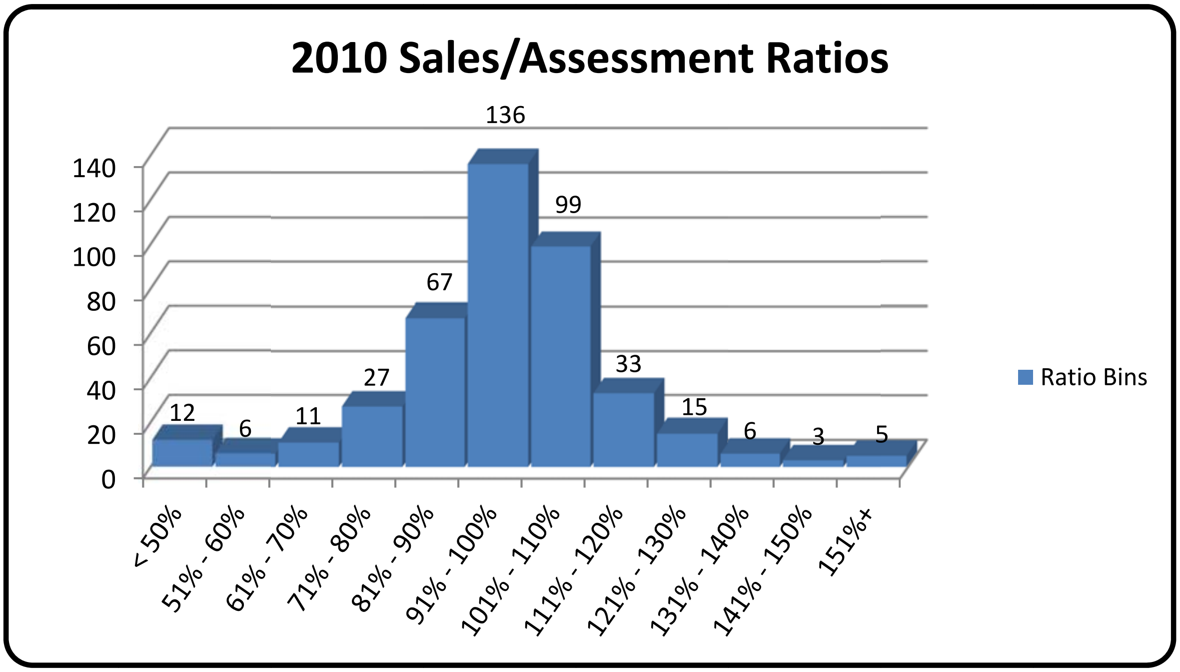
Table 7: 2010 Qualified Commercial Sales Analysis

Qualified Commercial Sales	**2009**	**2010**
Number of Sales	11	18
Median	69.26%	73.39%
Mean	74.09%	84.23%
Weighted Mean	66.10%	78.25%
Mode	n/a	n/a
Average Deviation	0.2077	0.3208
Standard Deviation	0.2500	0.4382
COD	29.99	43.71
PRD	1.12	0.94

Table 8: 2010 Qualified Residential Sales Analysis

Qualified Residential Sales	**2009**	**2010**
Number of Sales	394	402
Median	95.60%	96.82%
Mean	93.95%	96.73%
Weighted Mean	93.04%	95.99%
Mode	90.00%	100.00%
Average Deviation	0.1280	0.1209
Standard Deviation	0.2100	0.1803
COD	13.39	12.49
PRD	1.01	1.01

Table 9: Histogram of 2010 Sales Ratios



ANALYSIS

While statistics and annual comparisons are important, they must be put into context. This section of the report draws out trends present in the above statistics.

1. Overall, the number of qualified, usable sales in the 2010 calendar year increased slightly over the same period last year. This trend is good because the more sales available in the marketplace, the more accurately any given appraiser can estimate a property's market value.
2. An increasing sales/assessment ratio indicates that market sales are falling when compared to tax assessments. While tax assessments currently stand at 96.60% *of* qualified market sales, that ratio increased from 95.13% in 2009. Please note that this is interpreted generally across all neighborhoods and all property classifications. As one can see in the other classifications, the median ratio varies considerably when broken down.
3. The measure of uniformity, or how tightly-compacted the sales are, improved over the 2009 figure. So, market values decreased since 2009 and the sales are less sporadic meaning the market may be stabilizing in some areas.
4. Last year's data on the two property classes of vacant land and commercial property were staggering and indicated that market values were significantly higher than tax assessments in both classes. The 2010 data shows that sale prices in these classes have fallen since 2009. However, the price-related differential for vacant land increased and shows that higher valued vacant land is even more under assessed than in 2009.
5. Lastly, the commercial property classification seems to be far from stabilizing. Last year its price-related differential showed that higher valued properties were under appraised, but this

year's data shows just the opposite – higher valued properties are over appraised. To make matters more perplexing, the measures of uniformity and spread have increased. The standard deviation and coefficient of dispersion both are nearly 43%.

CONCLUSION

The 2013 Lee County revaluation will be extremely challenging. Data show that the market is unpredictable, but some property classifications are more predictable than others. Based on 2010 data, the largest allocation of staff resources will be in assessing commercial properties. While staff possesses the competence and experience to accurately assess these properties, discovering; analyzing; and interpreting the commercial data will be disproportionately time consuming. This is corroborated simply by reviewing the magnitude of change that took place in the commercial marketplace since 2009.

As emphasized throughout this report, January 1, 2013 will be the next point in time where market value and tax value should be one in the same. This in accordance with North Carolina General Statute 105 – 283, Uniform Appraisal Standards. To successfully appeal a property's tax value, a taxpayer must show a comparison of apples to apples, which means proving that the tax value as of its date of appraisal is/was more or less than true market value as of the same date. An appraisal as of March 2014 has no bearing on tax value because our next appraisal date is January 1, 2013.

As we progress through the 2013 revaluation the Division will hold community presentations to explain what we are finding. One of the most important aspects of a revaluation, I believe, is to involve the community and be as transparent as possible. We are members of the community too, and producing a great revaluation product is one of our foremost goals.

I hope this report gives its readers interesting information and provides an understanding of the tax office's process moving forward.